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MAR 21 2007

PATENT APPLN. NO. 10/633,419
SUBMISSION UNDER 37 C.F.R. § 1.114

PATENT

REMARKS

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being obvious over Hanafusa et al. (U.S. Patent No. 6,531,246) (hereinafter: "Hanafusa") in view of Yamazaki et al. (U.S. Patent No. 6,632,538) (hereinafter: "Yamazaki").

Claim 1 has been amended to include the limitation of claim 2 and claim 2 has been canceled. Claim 7 has been amended to recite that in the series of batteries the positive electrode terminal of one battery contacts the negative electrode terminal of another battery.

Regarding claims 1-6, the contact of different metals causes electric corrosion and when batteries are connected in series contact resistance increases. An object of the invention of Hanafusa is to provide a standard potential to a battery can and to inhibit fluctuation of the potential of the battery can. In Fig. 7 of Hanafusa, the contact between the battery can and the positive electrode terminal is exposed to the atmosphere, or air. In Fig. 15 of Hanafusa, the contact between the negative electrode terminal and a part identified as 17b is exposed to the atmosphere, or air. When different metals contact each other in air, if they are not strongly adhered by a clad junction (bonding) or welding treatment, electrical corrosion occurs by the contact of the different metals

for a long term to increase contact resistance. Hanafusa does not teach or suggest that electrical corrosion is caused by the contact of different metals, and it is not obvious to connect the different metals by a clad junction or welding (as now recited in claim 1 of the present application).

Yamazaki has been cited only as teaching that aluminum and stainless steel can be used as the materials for a positive and negative electrode in a lithium secondary battery, and does not overcome the deficiencies of Hanafusa.

Removal of the 35 U.S.C. 103(a) rejection as it applies to claims 1-6 is believed to be in order and is respectfully requested.

Regarding claims 7-12, when plural batteries are connected in series, the contact of battery terminals is conventionally a contacting of different metals. Contact resistance increases due to electrical corrosion caused by the contact of the different metals and power output of the assembled batteries in series significantly reduces. In the present invention as recited in claim 7, in each of the at least two batteries connected in series, a coating layer consisting of the same material of which one of the negative and positive electrode terminals is made is formed on a surface of the other of the negative and positive electrode

terminals. Therefore, when the batteries are connected, the contact between the batteries is a contact between the same metals and electrical corrosion caused by the contacting of different metals is prevented. Moreover, as recited in Claim 10, the electrode terminal and a coated layer (different metals) are strongly adhered by a clad junction (bonding) or welding treatment, and the electric corrosion caused by the contacting of different metals can be inhibited.

In a laminate battery of Hanafusa where the purpose is to provide a battery can that has a standard potential and fluctuation of the potential of the battery can is inhibited, increase of contact resistance is not a serious problem. Hanafusa does not suggest any problems caused by the the contacting of battery terminals in assembled batteries in series.

Yamazaki, as noted above, has been cited only as teaching that aluminum and stainless steel can be used as the materials for a positive and negative electrode in a lithium secondary battery and does not overcome the deficiencies of Hanafusa.

Removal of the 35 U.S.C. 103(a) rejection as it applies to claims 7-12 is also believed to be in order and is respectfully requested.

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A new claim, claim 13, has been added to the application. Claim 13 corresponds to amended claim 1 with the additional limitation that the battery can is cylindrical. Hanafusa does not disclose or suggest a battery having a cylindrical battery can.

Claim 13 is also allowable.

The foregoing is believed to be a complete and proper response to the Office Action dated November 21, 2006, and is believed to place this application in condition for allowance.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of time. The fee for any such extension and any additional fees may be charged to our Deposit Account No. 111833.

Respectfully submitted,
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